

# **NEOMERINTHE BAUCHOTAE, A NEW SCORPIONFISH (SCORPAENIDAE) FROM SAINT PAUL AND AMSTERDAM ISLANDS (SOUTHERN INDIAN OCEAN), WITH COMMENTS ON THE LIMITS OF THE GENUS**

by

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**ABSTRACT.** - A new species of scorpionfish, *Neomerinthe bauchotae*, is described from 14 specimens taken during a cruise of the R. V. Marion-Dufresne in the southern Indian Ocean in 1986, from beam trawls and drags at Amsterdam and Saint Paul islands at depths between 50-75 and 460-510 m. It can be distinguished from the 11 other species of *Neomerinthe* by the combination of a relatively low pectoral fin-ray count (usually 16, sometimes 17), dorsal soft rays numbering 10 1/2, the membranes of the pectoral fin being deeply incised between the middle and lower fin rays, the lack of a slit behind the last gill arch, the lack of a swimbladder, and in having a second preopercular spine. Comparison with other species of *Neomerinthe* and those of related genera suggests that the definition of the genus requires re-evaluation. *Neomerinthe bauchotae* is, after *Helicolenus dactylopterus*, the second scorpaenid reported from the islands of Saint Paul and Amsterdam.

**RÉSUMÉ.** - Une nouvelle espèce de rascasse, *Neomerinthe bauchotae*, est décrite à partir de 14 spécimens capturés au chalut à perche et à la drague, entre 50-75 et 460-510 m, lors d'une campagne océanographique du N. O. Marion Dufresne en 1986 autour des îles Saint Paul et Amsterdam, dans l'océan Indien sud. Cette espèce peut être aisément distinguée des onze autres appartenant au genre *Neomerinthe* par la combinaison des caractères suivants: relativement peu de rayons à la nageoire pectorale (normalement 16, quelquefois 17), 10 1/2 rayons mous à la nageoire dorsale, bordure postérieure de la nageoire pectorale profondément échancrée entre les rayons médians et ventraux, absence de fente en arrière du dernier arc branchial, absence de vessie natatoire et enfin présence d'une deuxième épine préoperculaire. La comparaison avec les autres espèces de *Neomerinthe* et celles de genres voisins suggère que la définition du genre soit ré-évaluée. *Neomerinthe bauchotae* est le second scorpaenidé, après *Helicolenus dactylopterus*, signalé autour des îles Saint Paul et Amsterdam.

**Key-words.** - Scorpaenidae, *Neomerinthe bauchotae*, ISW, St. Paul and Amsterdam islands, Taxonomy, New species.

A multidisciplinary oceanographic cruise (MD 50/JASUS, July 1986) of R. V. Marion-Dufresne around the islands of Saint Paul ( $38^{\circ}43'S$ ,  $77^{\circ}32'E$ ) and Amsterdam ( $37^{\circ}50'S$  -  $77^{\circ}31'E$ ) has allowed more complete identification of the marine fish fauna recorded from these isolated islands in the central part of the southern Indian Ocean. Bottom (beam trawl and drag) and pelagic (rectangular midwater trawl) gears were deployed to collect fishes. Bottom gears operated between 30 and 3100 meters. Duhamel (1989) analyzed the fish collected between the coast line and the 500 m depth contour and identified 17 species. A small scorpaenid (17 specimens in the MD50 JASUS collections) previously unknown

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from the area was one of three species identified only to genus. The species was present in three drag samples and four beam trawl catches and thus, found in 27% of the bottom trawls conducted between 30 and 500 m. Although it was evident to Duhamel (1989) that the specimens were most probably referable to *Neomerinthe*, it was not then possible to identify them to species. Comparison with other species of *Neomerinthe* and those of related genera reveals this species is new.

## MATERIALS AND METHODS

Counts and head spine terminology follow those of Eschmeyer (1969). Number of specimens for each count are given in parentheses following the count. Counts for the holotype are indicated by an asterisk. Measurements were taken as specified in Poss (1982).

The acronyms for depositories of type specimens are as follows: CAS = California Academy of Sciences, San Francisco, California; GCRL = Gulf Coast Research Laboratory, Ocean Springs, Mississippi; MNHN = Muséum national d'Histoire naturelle, Paris.

### *NEOMERINTHE BAUCHOTAE* N. SP.

(Figs 1, 2, Table I)

*Neomerinthe* sp. Duhamel, 1989. *Mésogée*, 49: 21-47 (description; color photograph [plate 2F]; information on collections).

#### Material examined

*Holotype*: MNHN 1989-273 (74.2 mm SL). Amsterdam, 38°48'S, 77°34'E, Sta. 21 CP100, 350-412 m, 18 July 1976.

*Paratypes*: MNHN 1990-1500 (1 spm, 78.4 mm), same data as holotype; badly damaged. - MNHN 1989-274 (1 spm, 48.2 mm) Amsterdam, 37°51'S, 77°29'E, Sta. 7 DC44, 90 m, 13 July 1986. - MNHN 1989-275 (1 spm, 58.7 mm) St. Paul, 38°49'S, 77°36'E, Sta. 22 DC108, 460-510 m, 18 July 1986. - MNHN 1989-276 (3 spms, 70.3-62.5 mm) St. Paul, 38°40'S, 77°30'E, Sta. 35 CP165, 80-100 m, 23 July 1986. - MNHN 1989-277 (4 spms, 64.2-46.0 mm) Amsterdam, 37°46'S, 77°33'E, Sta. 3, CP11, 50 m, 9 July 1986 (1 spm cleared and alizarin stained). - MNHN 1989-278 (1 spm, 53.7 mm) St. Paul, Banc des 16 milles, 39°00'S, 77°46'E, Sta. 24 CP116, 135-160 m, 19 July 1986. - MNHN 1989-279 (3 spms, 53.2-28.2 mm), Amsterdam, 37°47'S, 77°34'E, Sta. 3, DC8, 50-75 m, 9 July 1986. - CAS 70095 (1 spm, 79.8 mm), same data as MNHN 1989-275. - GCRL 23319 (1 spm, 51.0 mm), same data as MNHN 1989-279.

#### Description

Dorsal fin-rays XII, 10 1/2. Anal fin-rays III, 4 1/2 (1 specimen) - III, 5 1/2\* (13). Pectoral fin-rays 16\* (11) or 17 (3), rays 4 to 7 (counted from above) branched in largest individuals [see discussion below]. Lateral line with about 21-25 scales (damaged in holotype and most paratypes), with last scale extending over base of caudal fin (holotype with 24+1 on left; 23+1 on right). Gill rakers of first arch 4-6 in upper arch + 1 at middle of arch + 11-14 in lower arch (holotype with 5+1+12= 18 on both sides). Caudal fin with 10 (1), 11 (9\*), or 12 (3) branched rays (5-6 ventral; 5-6 dorsal), 18 segmented rays (9 ventral; 9 dorsal), and 9 (1), 10 (9\*), 11 (2), or 12 (1) unsegmented, procurent rays (4-6, usually 5 dorsal; 4-6, usually 5 ventral). Vertebrae 24, with 9 precaudal and 15 caudal centra.

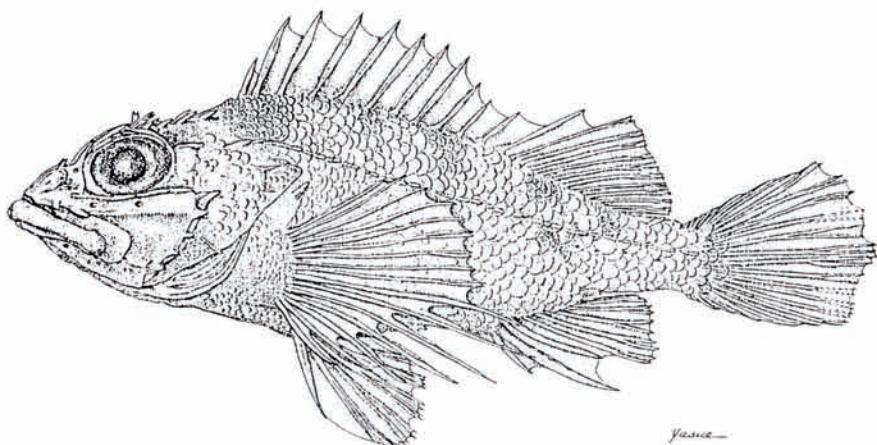


Fig. 1. - Lateral view of *Neomerinthe bauchotae* (Paratype, GCRL 23319; 51.0 mm SL). Branching of pectoral fin-rays based on holotype (MNHN 1989-273).

Head of moderate to large size (40-44% SL) (Fig. 1). Infraorbital 1 ( $IO_1$ ) with suborbital ridge continuous with ridge on infraorbitals 2 and 3, but not ending in spine. Two spines on  $IO_1$  extend ventrally and posteriorly over maxilla, smaller anteriorly, larger about twice length of smaller.  $IO_2$  with ridge that ends in spine posteriorly.  $IO_3$  with short ridge, nearly continuous with but slightly dorsal to that on  $IO_2$ . Second smaller ridge, also nearly continuous but slightly ventral to preceding ridge that also bears a small spine.  $IO_4$  present, small, without distinct spines. Nasal spine stout, pungent. Interorbit of moderate width (3.5-5.7% SL), shallow, with weak ridges that do not end posteriorly in spines (Fig. 2). Preocular spine sharp, slightly curved in larger specimens. Ridge leading to supraocular spine straight, not arching; supraocular spine pungent. Postocular spine strong, slightly curved, directed dorso-posterolaterally. Tympanic spine about 1.5 times size of postocular spine, also directed dorso-posterolaterally. Coronal spines absent. Sphenotic spine minute. Pterotic spine with ridge that ends in a small spine. Parietal and nuchal spines strong, broader at base and directed less laterally than preceding spines. Occiput not depressed but covered with small scales, about 5-12 in longitudinal row between the median posterior margin of the parietales at the rear of the occiput to level of the supratemporal lateral line canal at front of occiput. Nape with 5-8 predorsal scales between origin of first dorsal spine and rear of occiput. Scales extending anteriorly into interorbit almost to line between supraocular spines. Dorsal posttemporal spine absent. Small, ventral posttemporal spine present. Supracleithral spine prominent. Cleithral spine large. Posterior margin of preoperculum with 5 pungent spines, largest at end of suborbital ridge (stay), second spine ventral to but near first, third through fifth spines decreasing in size, with fifth spine less pungent than rest. Supplemental preopercular spine well developed at base of largest (first and dorsalmost) preopercular spine. Operculum with 2 spines, which do not extend beyond posterior edge of opercle. Maxilla extends to level about halfway between middle and posterior margin of pupil, without scales. Infraorbital bones and cheek without scales. Scales in postorbital region dorsally. Operculum covered with scales, except posteriorly. Underside of head, interopercle, and subopercle without scales. Frond-like cirrus on posterior margin of tubular anterior nostril and another, smaller one behind parietal spine. A larger frond-like cirrus behind supraocular spine.

Table 1. - Measurements of *Neomerinthe bauchotae*. Abbreviations correspond to measurements summarized in text. Percentage SL in parentheses.

	CAS	MINTIN 1950-1500	MINHIN 1989-276	MINTIN 1989-277	MINTIN 1989-276	MINTIN 1989-277	GCHIN. 1989-279	MINTIN 1989-278	MINTIN 1989-277	MINTIN 1989-274	MINTIN 1989-279	MINTIN 1989-277
SL	79.8	78.4	70.5	66.1	64.2	62.5	53.2	51.0	53.7	51.6	48.2	47.8
HL	35.2(44)	33.2(42)	29.3(42)	27.8(42)	27.9(43)	23.1(37)	22.2(42)	21.2(42)	23.4(44)	21.2(41)	20.9(43)	19.1(40)
SNOUT	9.3(12)	8.5(11)	7.7(11)	7.2(11)	7.7(12)	6.8(11)	6.5(12)	5.8(11)	6.3(12)	6.1(12)	5.7(12)	5.4(11)
ORHT	11.0(14)	11.0(14)	9.3(13)	8.5(13)	7.8(12)	7.8(12)	6.4(12)	7.0(14)	7.2(13)	6.5(13)	6.9(14)	6.5(14)
INTERORBIT	3.5(04)	4.5(06)	3.2(05)	3.0(05)	2.7(04)	2.7(04)	2.3(04)	2.4(05)	1.9(04)	2.1(04)	1.9(04)	1.8(04)
UPPER JAW	15.2(19)	15.0(19)	13.7(19)	12.2(18)	12.4(19)	11.8(19)	10.3(19)	9.5(19)	10.0(19)	9.4(18)	8.6(18)	8.3(17)
POSTORBIT	15.8(20)	13.5(17)	13.2(19)	11.3(17)	12.0(19)	9.3(15)	9.2(17)	8.6(17)	10.1(19)	8.8(17)	8.5(18)	8.1(17)
BODY DEPTH	26.2(33)	18.2(23)	19.1(27)	20.2(31)	19.7(32)	17.3(33)	17.4(34)	18.0(34)	15.3(30)	15.5(32)	14.3(30)	14.8(32)
PREDORSAL	30.2(38)	28.9(37)	24.6(35)	23.2(35)	24.6(38)	22.5(36)	18.6(35)	19.4(38)	20.4(38)	19.1(37)	17.7(37)	16.6(35)
ANAL FIN	22.7(28)	19.9(25)	19.3(27)	18.6(25)	18.2(29)	17.5(28)	16.0(28)	13.4(29)	16.0(30)	14.6(29)	14.0(29)	13.8(30)
CAUDAL FIN	21.1(26)	...(-)	17.4(25)	16.6(25)	18.5(29)	16.7(27)	13.2(25)	13.0(25)	14.6(27)	13.1(25)	12.3(26)	12.6(26)
PECTORAL FIN	26.3(33)	24.6(31)	21.5(31)	22.5(34)	21.6(34)	23.4(37)	17.7(33)	19.0(37)	17.2(32)	18.1(35)	13.8(28)	16.9(35)
PELVIC FIN	19.5(24)	17.6(22)	16.6(24)	16.7(25)	16.6(26)	16.2(26)	13.8(26)	13.0(25)	13.8(26)	12.7(25)	13.2(27)	12.2(26)
1ST DORSAL	6.5(08)	6.6(08)	5.8(08)	5.7(09)	5.5(09)	4.8(08)	3.9(07)	3.9(08)	4.5(08)	4.5(09)	4.1(09)	3.8(08)
2ND DORSAL	12.4(16)	8.6(11)	11.3(16)	9.6(15)	9.2(14)	9.8(16)	8.5(16)	6.6(13)	8.8(16)	7.8(15)	7.2(15)	7.0(15)
3RD DORSAL	14.6(18)	9.0(11)	11.7(17)	12.6(19)	11.8(18)	9.9(16)	9.5(18)	8.3(16)	9.1(17)	8.8(17)	8.6(18)	9.2(19)
4TH DORSAL	14.0(18)	8.2(10)	12.3(17)	12.7(19)	11.3(18)	10.0(16)	8.8(17)	8.6(17)	9.5(18)	9.0(17)	8.3(17)	8.7(18)
5TH DORSAL	12.4(16)	7.7(10)	11.9(17)	12.0(18)	10.8(17)	9.2(15)	8.2(15)	8.3(16)	9.2(17)	8.5(16)	7.4(15)	8.4(18)
PENLT. DORSAL	6.4(08)	6.5(08)	6.0(09)	6.5(10)	5.7(09)	5.0(08)	5.1(10)	4.8(09)	5.0(09)	4.5(09)	4.1(09)	4.1(09)
LAST DORSAL, SP.	10.8(14)	8.8(11)	9.3(13)	9.4(14)	9.8(15)	6.9(11)	7.2(14)	7.6(15)	8.1(15)	7.3(14)	7.8(16)	6.7(14)

CAS	MNHIN 70095	MNHIN 1990-1500	MNHIN 1989-276	MNHIN 1989-276	MNHIN 1989-276	MNHIN 1989-276	MNHIN 1989-276	MNHIN 1989-276											
1ST ANAL SPINE	8.6(11)	7.6(10)	7.1(10)	6.8(10)	6.2(10)	5.3(08)	5.1(10)	4.8(09)	5.5(10)	4.7(09)	5.1(11)	5.0(10)	4.9(11)	2.9(10)					
2ND ANAL SPINE	18.5(23)	16.5(21)	15.7(22)	15.6(24)	13.9(22)	13.3(21)	12.3(23)	10.7(21)	12.6(23)	11.5(22)	11.5(24)	10.5(24)	10.5(23)	6.5(23)					
3RD ANAL SPINE	14.6(18)	12.7(16)	11.9(17)	12.0(18)	10.8(17)	10.4(17)	9.4(18)	8.3(16)	9.4(16)	8.9(17)	9.0(19)	8.5(18)	8.6(19)	5.3(19)					
CAUDPED	8.2(10)	6.4(08)	6.4(09)	6.2(09)	6.0(09)	5.8(09)	5.4(10)	5.3(10)	4.9(09)	5.1(10)	4.5(09)	3.9(08)	4.2(09)	2.8(10)					
SNTD2	31.3(39)	30.2(39)	25.8(37)	24.5(37)	25.9(40)	22.7(36)	19.8(37)	20.1(39)	20.8(39)	19.6(41)	17.6(37)	16.1(35)	11.5(41)						
SNTD3	33.3(42)	32.1(41)	28.8(41)	26.9(41)	29.1(45)	24.5(39)	21.7(41)	22.1(43)	22.8(42)	21.5(42)	21.1(44)	19.3(40)	17.9(39)	12.2(43)					
SNTD4	36.2(45)	34.8(44)	31.5(45)	28.9(44)	30.6(48)	27.3(44)	23.5(44)	24.0(47)	24.4(45)	22.9(44)	22.2(45)	21.1(44)	18.8(41)	13.3(47)					
SNTD5	38.5(48)	37.3(48)	34.2(49)	31.3(47)	31.5(49)	28.6(46)	25.1(47)	25.4(50)	26.8(50)	24.8(48)	24.6(51)	22.6(47)	21.2(46)	14.2(50)					
D4INS	6.9(09)	3.3(04)	4.6(07)	4.6(07)	3.6(06)	3.5(06)	2.6(05)	2.8(05)	2.7(05)	3.4(07)	2.7(06)	3.1(06)	3.3(07)	2.2(08)					
SNTPEL	38.7(48)	18.2(23)	29.2(42)	31.0(47)	27.3(43)	28.7(46)	27.9(52)	22.7(45)	28.3(53)	22.5(44)	20.7(43)	24.3(51)	21.2(46)	11.5(41)					
PREP01	3.4(04)	3.0(04)	4.2(06)	3.8(06)	3.5(05)	3.1(05)	2.5(05)	1.9(04)	2.9(05)	2.9(05)	2.3(05)	2.0(04)	2.4(05)	1.7(G <sub>2</sub> )					
D1DS	9.4(12)	9.1(12)	9.1(13)	8.2(12)	7.5(12)	7.9(13)	8.0(15)	6.7(13)	6.6(12)	5.9(11)	6.3(13)	5.5(12)	5.5(12)	3.7(13)					
DSPEL	26.4(33)	16.4(21)	20.7(29)	20.4(31)	20.7(32)	20.0(32)	16.6(31)	17.2(34)	17.8(33)	16.8(31)	15.3(32)	13.7(29)	14.7(32)	8.9(32)					
D1PEL	25.6(36)	19.3(25)	20.3(29)	21.5(33)	21.3(33)	20.2(32)	17.9(34)	17.2(34)	19.0(35)	15.9(31)	15.3(32)	14.7(31)	15.5(34)	8.9(32)					
D5LDOS	17.3(22)	17.9(23)	17.4(25)	13.8(21)	16.4(26)	14.0(22)	11.0(21)	11.4(22)	12.0(22)	11.7(23)	11.3(23)	9.9(21)	10.7(23)	6.8(24)					
LDSLDR	14.9(19)	15.4(20)	14.3(20)	12.4(19)	13.4(21)	13.2(21)	10.5(20)	10.4(20)	10.9(20)	10.3(20)	10.5(22)	9.0(19)	9.8(21)	5.7(20)					
LDRLLAR	10.8(14)	8.9(11)	9.2(13)	8.8(13)	10.5(16)	8.6(14)	7.7(14)	8.0(16)	7.5(14)	7.6(15)	7.0(15)	6.7(14)	6.4(14)	4.0(14)					
ALAR	19.6(13)	9.8(13)	11.6(17)	9.6(15)	8.8(14)	8.6(14)	7.0(13)	6.4(13)	7.5(14)	7.8(15)	7.3(15)	6.1(13)	6.7(15)	3.8(13)					
PELA	22.6(28)	21.9(28)	23.4(33)	20.7(31)	16.5(26)	18.6(30)	15.2(29)	14.3(28)	15.3(28)	17.5(34)	14.1(29)	13.2(28)	13.3(29)	8.7(31)					
DIA	33.9(49)	36.2(46)	33.2(47)	30.4(46)	30.0(47)	20.3(32)	25.6(48)	25.2(49)	25.8(48)	25.0(48)	23.5(49)	21.8(46)	21.9(48)	13.5(48)					
LDSPEL	29.6(37)	23.9(30)	28.2(40)	25.5(39)	23.2(36)	23.5(38)	19.1(36)	19.8(39)	20.8(39)	20.2(39)	17.6(37)	16.9(35)	17.5(38)	10.8(38)					
LDSLAR	20.3(25)	17.1(22)	17.6(25)	15.1(23)	16.3(25)	15.1(24)	13.3(25)	13.5(26)	12.8(24)	13.5(26)	11.4(24)	10.7(22)	11.1(24)	7.0(25)					
LDKA	20.5(26)	16.7(21)	16.1(26)	16.4(25)	16.8(26)	15.7(25)	13.8(26)	13.3(26)	14.1(25)	12.1(25)	12.1(25)	12.6(27)	6.7(24)						
LDKA	20.7(26)	17.3(22)	17.9(25)	15.8(24)	16.4(26)	15.9(25)	14.2(27)	14.0(27)	14.3(27)	13.5(25)	12.4(25)	11.9(25)	11.7(25)	7.4(26)					
D5A	32.2(40)	29.3(37)	27.1(39)	24.0(36)	24.8(39)	24.1(39)	20.8(39)	20.9(41)	20.5(39)	19.1(40)	17.5(37)	17.9(39)	11.2(40)						

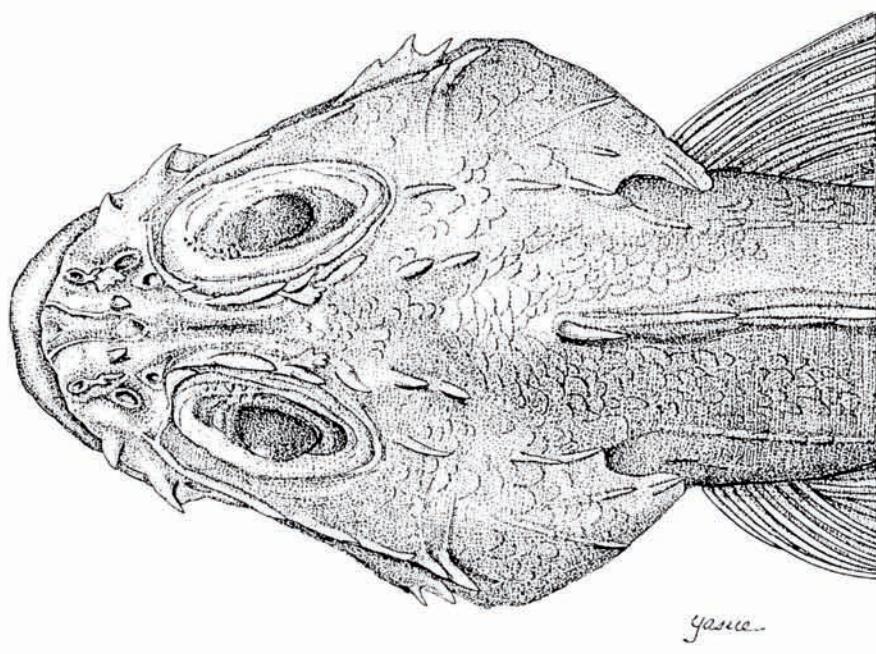


Fig. 2. - Dorsal view of head of *Neomerinthe bauchotae* (Paratype, GCRL 23319).

Body scales of moderate size, with about 38-42 vertical rows, (many paratypes with missing scales); each above lateral line behind head, with about 17-31 ctenii in relatively narrow, raised posterior field. Scales on posterior part of head and on body ctenoid, smaller than those on body; smallest anteriorly. Lateral line scales 36-42, extending onto base of caudal fin (many specimens with missing scales). Cirri absent on body. Swimbladder absent.

Dorsal fin originates dorsal to about middle of opercle. Third and fourth spines longest, with second through fourth spines notably curved near base. Anal fin with second spine notably longer than third. Pectoral fin, with middle fin rays distinctly longer than those above or below, extends posteriorly to between first and third anal spines; largest specimens with 3 or 4 middle rays (4th-7th from above) with single branch; ventral rays somewhat thicker than those dorsally, with membranes deeply incised nearly half length of fin ray between rays 4-7 (counted from below). Caudal fin only slightly rounded, with 10-12 (usually 11 but often 12) branched rays (usually 6 dorsally + 5 ventrally).

Caudal skeleton with last haemal spine broad, weakly ankylosed to second preural centrum, supporting 2 or 3 procurent caudal fin-rays; parhypural broad, weakly ankylosed to compound urostylar centrum, free of hypurals, typically supporting segmented ray ventral to lowermost branched ray; hypurals 1 and 2 fused, usually supporting 6 branched rays, autogenous from compound urostylar centrum and hypural 3; hypurals 3 and 4 fused, autogenous or occasionally only weakly ankylosed to compound urostylar centrum; supporting 6 branched rays and often one segmented, unbranched ray; hypural 5 autogenous, supporting 1 or 2 segmented but unbranched rays; 3 broad epurals, each typically supporting 1 procurent ray; uroneural long, autogenous, (or occasionally perhaps weakly ankylosed posteriorly to compound urostylar centrum); neural spine of preural centrum broad, short.

A photo taken shortly after capture (MNHN 1989-279; Duhamel, 1989) and the largest specimen of MNHN 1989-277, which is much better pigmented than the rest, are used to describe body coloration. Head and body distinctly reddish with distinctly darker markings primarily over the dorsum. The body is buff white or tan ventrally. Head darkest, nearly brown predorsally over occiput and interorbit. Diffuse dark bars extend posteriorly from orbit and two others, lighter in color, posteroventrally from orbit to preopercle and ventrally across cheek. Darker markings on subopercle and just anterior to lowermost preopercular spine. Notably darker transverse saddle-shaped bars over body, most heavily pigmented at base of dorsal fin that reach to or below lateral line; one bar over nape, second much fainter at base of 2nd and 3rd dorsal spines, third broad and prominent at base of dorsal spines 5-7, fourth at base of dorsal spines 9 and 10 does not continuously extend ventrally, fifth broadest dorsally and extending below soft rayed part of dorsal fin but narrowing and weakening as it approaches bases of posteriormost anal soft rays, and sixth over caudal peduncle and base of caudal fin forming two pale spots dorsally and ventrally at base of caudal fin. A dark but diffuse blotch over the posterior part of the spinous dorsal fin that is contiguous with fourth bar (not evident in color photograph). A distinct, red blotch on pectoral fin dorso-anteriorly near base. Anal fin with a few diffuse spots arranged in diffuse bars centered over each spine or ray; that at base of fin at position continuous with bar descending from soft-rayed part of dorsal fin nearly black. Caudal fin with elongate markings forming diffuse bars over fin rays but not on transparent membrane. Few specimens, now in ethanol, with much pigment.

Measurements, except SL, for the holotype in mm are presented first, followed in parentheses by the percentage standard length of the holotype and the range of percentage standard lengths for the paratypes. Abbreviations for measurements of selected paratypes presented in Table I are in parentheses. Measurements for one trawl-damaged specimen (MNHN 1989-273) deleted from range of percentages indicated by an asterisk. Standard length (SL) 74.2(46.0-79.8), head length (HL) 33.2(45;37-44), snout 9.9(13;10-13), orbit diameter 10.2(14;11-17), least width of interorbit 3.6(4.8;3.5-5.7), upper jaw length 14.6(20;17-20), postorbit 13.8(18;15-20), body depth at level of pelvic insertion 24.8(33;27-34), predorsal 30.5(41;35-41), anal fin 19.7(27;25-30), caudal fin 20.7(28;25-29)\*, pectoral fin 27.5(37;29-37), pelvic fin 18.2(24;22-27) first dorsal spine 6.2(8;7-10), second dorsal spine 11.4(15;13-19), third dorsal spine 12.8(17;16-19), fourth dorsal spine 12.0(16;16-19)\*, fifth dorsal spine 10.5(14;14-18)\*, penultimate dorsal spine 6.0(8;8-10), last dorsal spine 9.9(13;11-16), first anal spine 7.1(9;8-11), second anal spine 15.7(21;21-24), third anal spine 12.3(17;16-19), maximum width of interorbital ridge 1.5(2.0;1.2-2.1), caudal peduncle (CAUDPED) 7.1(9;8-10), snout to base of second dorsal spine (SNTD2) 31.5(42;35-42), snout to base of third dorsal spine (SNTD3) 33.9(46;39-46), snout to base of fourth dorsal spine (SNTD4) 36.5(49;41-49), snout to base of fifth dorsal spine (SNTD5) 38.3(52;45-52), width of first dorsal spine at midlength 0.5(0.7;0.40-0.80), depth of interorbit 1.1(1.4;0.9-2.0), incision of fin membrane at fourth dorsal spine from tip to membrane (D4INS) 4.3(6;5-9), snout to pelvic insertion (SNTPEL) 34.9(47;42-53)\*, opercular tip to dorsal fin (DOP) 7.5(10;8-12), uppermost preopercular spine length (PREOP1) 5.1(6.9;3.7-6.9), base of first dorsal spine to base of fifth dorsal spine (D1D5) 9.7(13;11-15), base of fifth dorsal spine to pelvic insertion (D5PEL) 25.7(35;21-35), first dorsal spine base to pelvic insertion (D1PEL) 26.7(36;27-36), fifth dorsal spine base to base of last dorsal spine (D5LDS) 16.7(22;21-25), base of last dorsal spine to base of last dorsal ray (LDSLDR) 14.5(19;19-22), base of last dorsal ray to base of last anal ray (LDRLAR) 10.8(14;11-16), anal origin to base of last anal ray (ALAR) 9.6(13;12-16), pelvic insertion to anal origin (PELVA) 21.8(29;26-34), first dorsal spine base to anal origin (D1A) 36.0(48;32-49), base of last dorsal spine to pelvic insertion (LDSPEL) 29.3(39;35-40)\*, base of last dorsal spine to base of last anal ray (LDSSLAR) 18.4(25;22-26), base of last dorsal ray to anal origin (LDRA)

18.3(25;21-27), base of last dorsal spine to anal origin (LDSA) 19.1(26;22-27), base of fifth dorsal spine to anal origin (D5A) 29.5(40;36-41).

#### Diagnosis

*Neomerinthe bauchotae* is distinguishable from all other species of *Neomerinthe* in lacking a slit behind the fourth gill arch and from most by the posterior margin of the pectoral fin being deeply incised between the middle and lower fin rays. It is unlike the type of the genus, *Neomerinthe hemingwayi* Fowler, in lacking a swimbladder and scales on the cheek and maxilla, and in having a second preopercular spine and fewer lateral scale rows (60-70 in *N. hemingwayi*). It differs from *N. beanorum* Evermann & Marsh in having 1 or 2 more dorsal soft rays and a larger second preopercular spine. It is separable from *N. rufescens* (Gilbert) in having two (occasionally one) fewer pectoral fin-rays (18 in *rufescens*), in having 10 1/2 branched dorsal fin-rays (9 1/2 in *rufescens*). It is unlike *N. amplisquamiceps* (Fowler) in having more gill rakers (17-20 vs. 15), the upper two preopercular spines much closer together, and fewer pectoral fin-rays (16-17 vs. 20-21). It differs from *N. megalepis* (Fowler) in having fewer pectoral fin-rays (18-20 in *megalepis*) and more lateral scale rows (38-42 vs. 25-30 in *megalepis*). *N. bauchotae* can be distinguished from *N. pallidimacula* (Fowler) in having a second preopercular spine (absent in *pallidimacula*) and fewer pectoral fin-rays (16-17 vs. 20 in *pallidimacula*). *N. bauchotae* can be separated from *N. kaufmani* (Herre) by its longer snout, a much less rounded head profile dorsally, and fewer pectoral fin-rays (16-17 vs. 19 in *kaufmani*). *N. bauchotae* differs from *N. folgori* (Postel & Roux) in having fewer lateral line scales rows (38-42 vs. 77 [reported as about 85 in original description]), hypurals 3 and 4 fused instead of separate, and in having a much smaller symphyseal knob (but this may be size dependent). It is unlike *N. nielseni* (Smith) in having fewer pectoral fin-rays (16-17 vs. 18-19) and more lateral scale rows (38-42 vs. 30-35 in *nielseni*) and unlike *N. rotunda* Chen in having 10 1/2 dorsal spines (9 1/2 in *rotunda*), fewer pectoral rays (16-17 vs. 18), and a large second preopercular spine (minute in *rotunda*). *N. bauchotae* is similar to *N. procurva* Chen in overall head and body shape but differs in having one more branched dorsal ray (9 1/2 in *procurva*), fewer pectoral fin-rays (16-17 vs. 18-20 in *procurva*), and a second preopercular spine (absent in *procurva*).

Because branched pectoral fin-rays develop only at larger sizes, small specimens of species of *Neomerinthe* are difficult to distinguish from those of *Pontinus*. However, *N. bauchotae* differs from all species of *Pontinus* by having no slit behind the last hemibranch. *Neomerinthe bauchotae*, a small species with a maximum observed total length of 101 mm, is similar in most counts to *Sebastapistes mauritania* (Cuvier) but differs most notably in having 10 1/2 dorsal soft rays (9 1/2 in *mauritania*) and in lacking coronal spines present in the latter. *N. bauchotae* is also similar in most counts to *Phenacoscopius adenensis* Norman but is readily separable from it in having a complete lateral line, the pectoral fin membrane more incised marginally, and usually one more soft dorsal fin-ray and one less pectoral fin-ray.

#### Etymology

This species is named after Marie Louise Bauchot in recognition of her numerous contributions to ichthyology.

#### Distribution

*Neomerinthe bauchotae* is presently known only from the islands of Amsterdam and Saint Paul and from a bank 16 miles to the SE of Saint Paul island in the southeastern Indian Ocean at depths between 50-75 and 460-510 m.

### Biological remarks

The presence of numerous maturing ova in some specimens (MNHN 1989-276), suggests that *Neomerinthe bauchotae* is likely a small species.

### DISCUSSION

The genus *Neomerinthe* was created by Fowler (1935) on the basis of a single specimen of *N. hemingwayi*. He noted it was most similar to *Merinthe* Snyder [= *Pontinus*, according to Eschmeyer, 1969] but differed from it in having no supraorbital tentacles, shorter pectoral fins, the upper pectoral rays divided, the maxilla and snout more or less finely scaled, and a different spine count [based on an abnormality of the dorsal fin in the holotype, ANSP 63482]. In addition to the type species, there appear to be 9 other valid species that have been unequivocally assigned to *Neomerinthe*: *N. beanorum* Evermann and Marsh from the Caribbean and western Atlantic, *N. rufescens* (Gilbert) from the Hawaiian Islands, *N. amplisquamiceps* (Fowler), *N. megalepis* (Fowler), and *N. pallidimacula* (Fowler) from the western Pacific Ocean, *N. folgori* (Postel & Roux) from the Cape Verde Islands and off Mauritania, *N. nielseni* (Smith) from South Africa, and *N. rotunda* Chen and *N. procurva* Chen from Taiwan.

In his important monograph on Atlantic scorpionfishes, Eschmeyer (1969) noted that *Neomerinthe* is "very close" to *Pontinus* from which it differs in having at least some branched pectoral fin-rays in adults. As characterized by Eschmeyer (1969), Atlantic species of both genera have XII dorsal rays, a swimbladder, 24 vertebrae, ctenoid scales on the body, no pit in the occiput, teeth on the palatines, a slit behind fourth gill arch, a pallid peritoneum, supplemental preopercular spines, the second preopercular spines small to absent, scales over the cheek, postorbit, and occiput, and a full complement of head spines, save for the absence of coronal spines.

Some species of *Neomerinthe*, assigned to the Indo-West Pacific genus *Sebastapistes* Gill, have been reassigned to *Neomerinthe* (Chen, 1981; Eschmeyer, 1986). We tentatively agree with the suggestion of Chen (1981) that *Scorpaena kaufmani* Herre be included in the genus and with Eschmeyer (1986) in the assignment of *Sebastapistes nielseni* Smith to *Neomerinthe* thus bringing the total number of previously described species to 11. The relationship of species of these genera to the similar but rare species of *Phenacoscorpius* Fowler is also obscure. Except for the development of the lateral line, included species are similar in many respects. Although traditionally recognized, none of these genera have been comprehensively reviewed nor have the necessary anatomical comparisons been made within a cladistic context to assess the appropriateness of such recognition. Whether they form distinct, phylogenetically convex groups remains to be demonstrated.

Several features of *Neomerinthe bauchotae* suggest that revisionary work is in order. In *N. bauchotae* there is no slit behind the last gill arch and there is no macroscopic evidence of a swimbladder. Only in our largest specimens is branching evident in the pectoral fin-rays, and this is simple in nature and confined to 1-4 rays (4-7 from above). As observed by Eschmeyer (1965), the importance of unbranched pectoral fin-rays is difficult to assess, possibly the retention of a juvenile condition. We note that some specimens of *Pontinus* (i.e., the holotype of *Pontinus clemensi*) may occasionally [abnormally?] have a branched fin ray. Although species of *Sebastapistes* generally occur in depths shallower than species of *Neomerinthe*, *N. rotunda* and *N. bauchotae* can be found in relatively shallow water, ruling out the possibility of using depth to distinguish the genera as has been done by Eschmeyer (1986) for eastern Indian Ocean species. Like species of *Sebastapistes*, but unlike species of *Pontinus* and other congeners, *N. bauchotae* lacks a slit behind the last hemibranch, a derived, but not uniquely derived

(synapomorphous) condition among scorpaenoids. Species of *Phenacoscorpius* found in deeper water (347-550 m) are intermediate in having a minute slit behind the last hemibranch. We also observe that in the holotype of *N. folgori* hypurals 3 and 4 are unfused, a presumably plesiomorphic condition observed in all species of *Pontinus* examined, but not in other species of *Neomerinthe*, *Phenacoscorpius*, or *Sebastapistes*. World-wide revision of all four genera, including various Indo-Pacific species assigned to *Scorpaena* is needed.

Hureau (1969) reported a single species of scorpaenid from the islands of Saint Paul and Amsterdam. Eschmeyer and Hureau (1971) subsequently reidentified this material as *Helicolenus mouchezi* (Sauvage), which is also known from Tristan da Cunha. Additional materials made available by the MD50/JASUS program showed wide variability in color pattern and led Duhamel (1989) to conclude that the nominal species *mouchezi* is best treated as a subspecies of *Helicolenus dactylopterus*. The description of *Neomerinthe bauchotae* adds a second scorpaenid to the fauna of these isolated islands.

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